

NEW APPLICATION
PEEPLS VALLEY WATER C
POST OFFICE BOX 88006
PHOENIX, ARIZONA 85080
TOLL FREE 1-888-892-0258 PHOENIX 602



0000109281

April 5, 2010

Arizona Corporation Commission
Docket Control Utilities Division
1200 W. Washington Street
Phoenix, AZ 85007

Docket No. W-02146A-10-

W-02146A-10-0131

Re: Peeples Valley Water Company Application for Approval of a Main Line
Extension Agreement.

Docket Control:

Attached are the original and 13 copies of Peeples Valley Water Company's Agreement for a main line water extension for a single landowner desiring water service within Applicant's existing service area.

This filing includes the following items pursuant to the Arizona Corporation Commission's Rules:

1. Water Main Extension Agreement signed by both parties.
2. Map showing location of area within existing C. C. & N. boundaries of Applicant. (Exhibit A)
3. Map showing location of landowner's property and description. (Exhibit B)
4. Engineering analysis conducted by NYAH Engineering regarding capacity of Applicant's existing distribution system to handle the extension. (Exhibit C)
5. Detail engineering drawings and specifications prepared by NYAH Engineering regarding the main line extension (Exhibit D)
6. Certificate of Approval to Construct Water Facilities issued by Yavapai County (Exhibit E)
7. Water Data Use Sheet.

A copy of this filing has been provided to the Landowner, Mr. Ron Lofquist. Peeples Valley Water Company will file with the ACC the actual cost to construct the water facilities upon the completion of the project.

Arizona Corporation Commission

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AZ CORP COMMISSION
DOCKET CONTROL

All correspondence regarding this matter should be directed to the following:

Peoples Valley Water Company


Mr. Richard Darnall
P. O. Box 88006
Phoenix, AZ 85080
602-866-2329 Office
602-866-0313 (Fax)
ursaz@aol.com email

Nyah Engineering

Mr. Prad Kshatriya, P.E.
NYAH Engineering
5101 E. Libby Street
602-697-8917 Office
602-324-9278 (Fax)
pradk@nyahengineering.com email

Sincerely,



Richard Darnall
 Peoples Valley Water Company

Attachments

WATER MAIN EXTENSION AGREEMENT

PARTIES: "WATER COMPANY" PEEPLES VALLEY WATER COMPANY,
an Arizona Corporation
P. O. Box 88006
Phoenix, Arizona 85030

"LANDOWNER" RON LOFQUIST
an Individual
430 Sagebrush Trail
Wickenburg, Arizona 85080

DATE: March 31, 2010

RECITALS:

- A. WATER COMPANY is a public service corporation engaged in the business of supplying domestic water in portions of Yavapai County, Arizona and its franchise includes the property shown in Exhibit A.
- B. LANDOWNER owns the real property situated in Yavapai County, described as follows:

A tract of land recorded in the Yavapai County Records office in Book 106 of maps, page 3 (the Property). Exhibit B attached hereto.
- C. LANDOWNER desires to enter into an agreement with WATER COMPANY regarding water to be supplied to the above-described real property.
- D. WATER COMPANY had a consulting engineering firm perform a water systems analysis, attached as Exhibit C, to determine whether such a line extension would have an operational impact on existing customers. That study indicated that there was sufficient water distribution capacity to deliver additional volume of water to the LANDOWNER.

AGREEMENT:

Now, therefore, in consideration of the mutual covenants hereinafter set forth, it is Mutually agreed as follows:

1. CONSTRUCTION OF NEW WATER MAIN

WATER COMPANY will construct or cause to be constructed approximately 2,200 feet of a six (6) inch water main, pressure pump and associated facilities to supply domestic water to the Property. The consulting engineer's plans showing the description of materials and facilities to be constructed are attached hereto as

Exhibit D. Additionally, a Certificate of Approval to Construct and approval by the Yavapai County Health Department is attached hereto as Exhibit E. Said cost of the line extension shall be paid for by the LANDOWNER and LANDOWNER shall arrange for all financing thereof. Said extension shall, in all respects, conform with the then existing Arizona Corporation Commission's Rules and Regulations relating to the operation of Domestic Water Companies and such other public agencies having authority over the construction and operation of the water system. WATER COMPANY has submitted its plans and specifications to LANDOWNER and LANDOWNER has approved said plans. WATER COMPANY has submitted to LANDOWNER an estimated cost of construction that includes materials, consulting engineer fees and other direct costs of the line extension to be the sum of \$ 108,000. Said sum shall be adjusted to reflect the actual cost once a qualified contractor has been selected and approved by both Parties and the consulting engineer. Said actual cost of the line extension shall be the amount used for the purpose of the refund provisions under paragraph 3 hereof.

2. CONVEYANCE TO WATER COMPANY

LANDOWNER shall convey and assign to WATER COMPANY all of its rights, title and interest in and to such line extension of the water system, after completion of the line extension of the water system, and WATER COMPANY shall accept such line extension for repair and replacement. LANDOWNER shall further give and grant to WATER COMPANY any easements and right of way for such main line extensions of the water system as shall be desirable or necessary.

3. REPAYMENT OF COSTS TO LANDOWNER

Upon the completion of the main line extension of the water system and conveyance by LANDOWNER of same to WATER COMPANY, as set forth above, WATER COMPANY agrees that it shall refund the costs of the main line extension in the following manner:

A minimum amount equal to ten percent (10%) of the total gross annual revenues (exclusive of excise or sales taxes levied thereon) from the sale of water delivered to the Property with such amount to be paid on or before August 31st of each year for the preceding period of July 1st through June 30th.

Such refund shall be paid for a period of time not to exceed ten (10) years or until such time as the total amount of the costs of such construction have been paid, whichever is the lesser period of time. No interest will be paid to LANDOWNER by WATER COMPANY. In the event the costs of such installation are not completely refunded within the ten (10) year period, the remaining balance shall become non-refundable and shall be

considered as a contribution in aid of construction. In no event shall WATER COMPANY pay an amount in excess of the costs to construct and install the main line extension.

Additionally, LANDOWNER is located at the end of the 2,200 feet of line extension and there is the potential for other property owners to connect to the line extension in the future. Therefore, WATER COMPANY will refund to LANDOWNER a pro-rata share of the total Cost of Construction if another property owner connects to the line extension. Such pro-rata amount shall be collected by WATER Company from new customer and paid to LANDOWNER. This refund provision shall be effective for a period not to exceed five (5) years from date of conveyance of the LANDOWNERS rights, titles and easements to the line extension facilities to the WATER COMPANY.

4. COST OF CONSTRUCTION

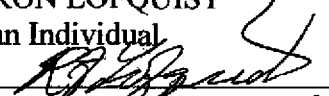
WATER COMPANY, its consulting engineer and LANDOWNER will mutually select a qualified contractor to install the line extension and other associated facilities. LANDOWNER shall pay the actual cost of labor, materials, permits, consulting engineer fees and other costs directly associated with the cost of constructing the line extension.

5. COMPLETION OF EXTENSION AND APPROVALS

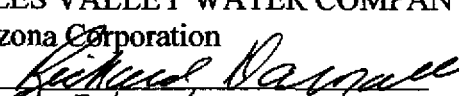
WATER COMPANY agrees to use its best efforts to cause the line extension to be completed, inspected and approved as soon as possible. Before this Agreement shall become effective and binding upon both Parties it must be approved by the Arizona Corporation Commission, or its authorized representatives, and in the event it is not approved this Agreement shall become null and void. In the event that the Arizona Corporation Commission requires the WATER COMPANY to make significant changes to this Agreement and such changes have an economic impact on the feasibility of the line extension, either Party may terminate this Agreement. However, the LANDOWNER shall be responsible to pay for any outstanding amounts owed to consulting engineer and for any material that may have been ordered or purchased for the construction of the line extension.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed by their duly authorized representatives as of the date shown below.

RON LOFQUIST
an Individual


Date: 4-1-2010


PEEPLS VALLEY WATER COMPANY
an Arizona Corporation

By: 
Date: 3/31/2010

COUNTY: Yavapai


RANGE 5 West

TOWNSHIP 11 North




U-1639 (1)

Antelope Water Company




U-2146 (1)

People's Valley Water Company




U-2255 (2)

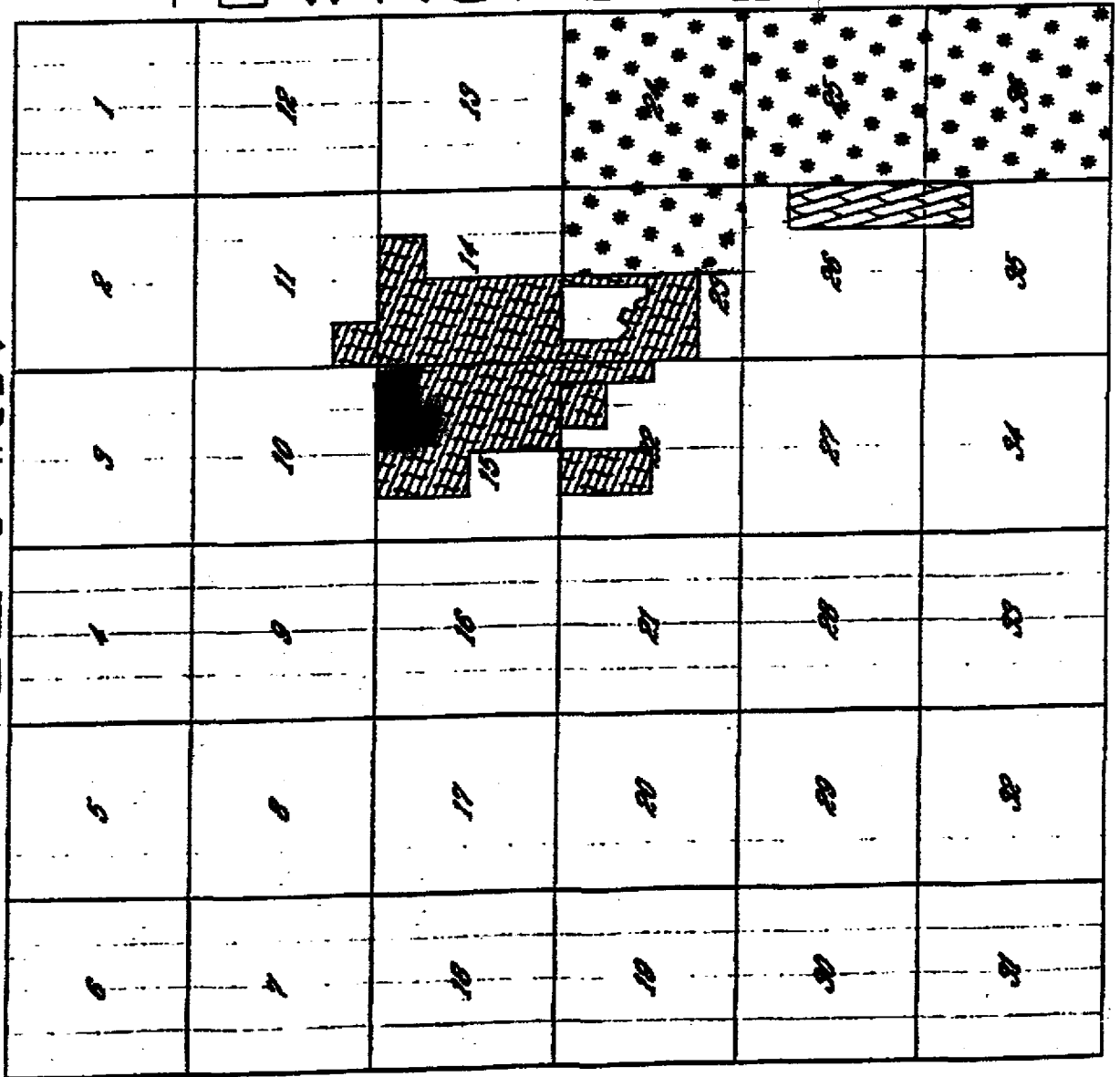
Yarnell Water Improvement Association



LAND OWNER

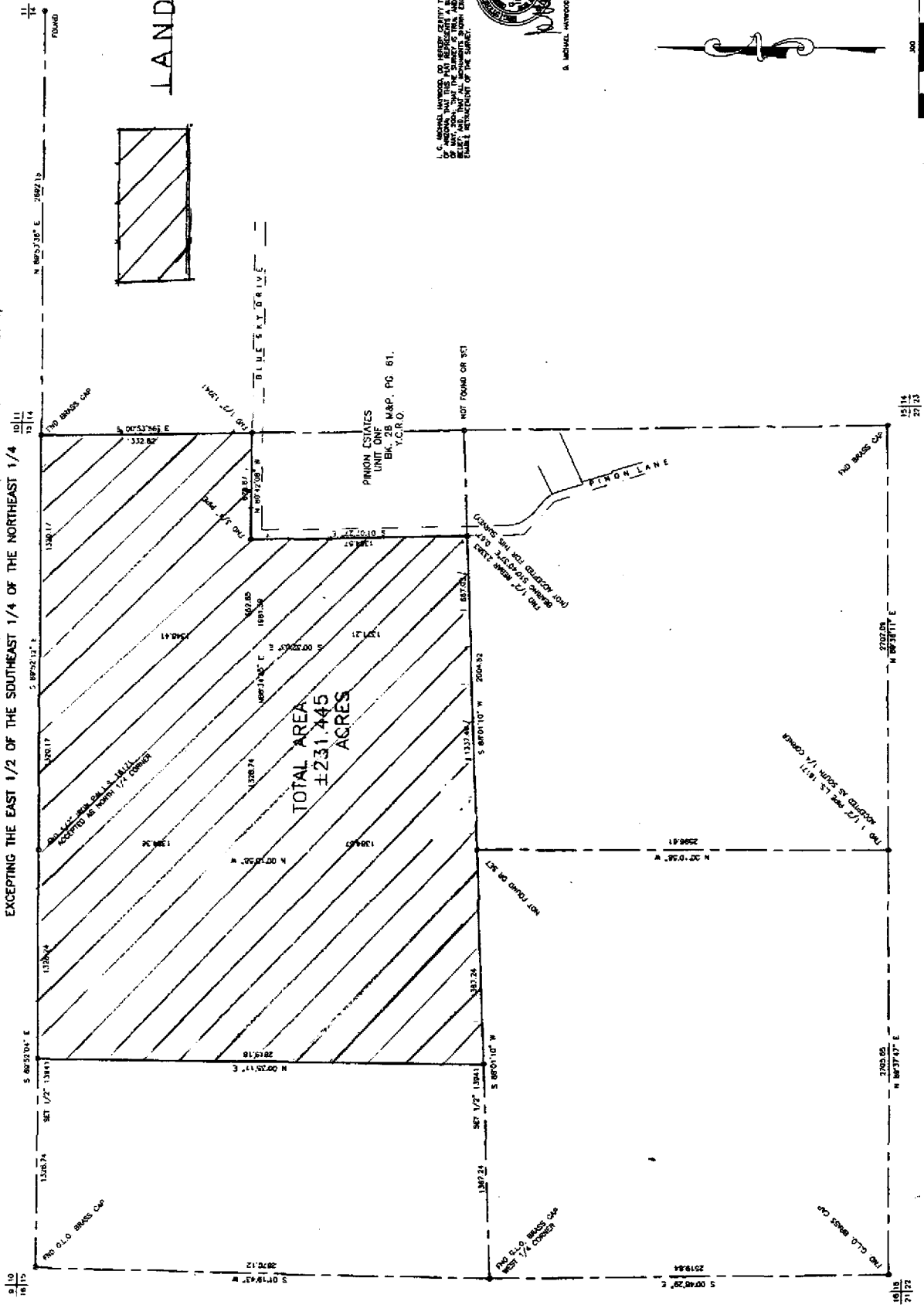


People's Valley Water Company
Contiguous Area



RESULTS OF SURVEY OF A PORTION OF

SECTION 15, TOWNSHIP 11 NORTH, RANGE 5 WEST,
GILA AND SALT RIVER BASE AND MERIDIAN, YAVAPAI COUNTY, ARIZONA
FOR THE PURPOSE OF DEFINING THE EAST 1/2 OF THE NORTHWEST 1/4, AND THE NORTHEAST 1/4
EXCEPTING THE EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4



LAND OWNER

I, MICHAEL HAYWOOD, of the County of Pinal, State of Arizona, do hereby certify that I am a Registered Land Surveyor in the State of Arizona, and that this is a true and correct copy of the original survey as shown to me by the owner of the land, and that the same is correct and true, and that I am not aware of any fraud or collusion in the same, and that I am not aware of any fraud or collusion in the same, and that I am not aware of any fraud or collusion in the same.

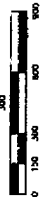


A. MICHAEL HAYWOOD - AZ RLS No. 1241

Exhibit B

#373970

RECORDING'S DATA	
Filed and recorded at the request of	M. HAYWOOD ASSOC. INC.
Book	126
Page	3
Recorded at	Tempe, Arizona
Recorded by	CHERRY-COLOR
Surveyor	Michael Haywood
Survey	SECTION 15, TOWNSHIP 11 NORTH, RANGE 5 WEST, GILA AND SALT RIVER BASE AND MERIDIAN, YAVAPAI COUNTY, ARIZONA
Survey No.	1241
Survey Date	10/11/00
Survey Time	10:00 AM
Survey Location	Section 15, Township 11 North, Range 5 West, Gila and Salt River Base and Meridian, Yavapai County, Arizona
Survey Method	Survey
Survey Instrument	Survey
Survey Data	Survey



Nyah Engineering Inc.

October 11, 2007

Mr. Richard L. Darnall
Peeples Valley Water Company
P.O. Box 88006
Phoenix, AZ 85080

Subject: Peeples Valley Water Company System Investigation
Task-1: Assess Capacity of Existing Water System

Dear Mr. Darnall:

Submitted herewith are Nyah Engineering's findings for Task-1 of the Peeples Valley Water Company (PVWC) system investigation. This letter report includes an assessment of the capacity of Peeples Valley Water Company (PVWC) to serve existing customers plus Mr. Ron Lofquist's parcel and to the extent any additional connections will be made in the future.

WATER SYSTEM OVERVIEW

Peeples Valley is a rural, unincorporated community between Wickenburg, AZ and Prescott, AZ. It is situated in a Pinon/grassland area with a rolling, hilly topography. Peeples Valley Water Company (Peeples) provides water services to the residential communities of Pinon Estates, Yavapai Country Club and the area immediately surrounding Yavapai Country Club.

As depicted in Figure 1 below, the PVWC water system consists of two water supply wells, two 80,000 gallon storage tanks, two pressure pumps, a hydro pneumatic tank and gravity pressure and pumped pressure distribution piping systems. Distribution system mains are predominately 6-inch PVC pipes with one length each of 4-inch and 8-inch PVC. Flow meters are located at each water supply well and at each customer service connection.

The community has an all-volunteer fire department that deploys tanker trucks with pumps and drop tanks to fight fires. There are several locations within the water system

Nyah Engineering Inc.

that can be used to refill the tankers. There are two hydrant fixtures; however, the hydrants are only used for refilling tankers, not for fighting. The fire department has an Insurance Service Fire (ISO) rating of "8". An ISO rating of "8" requires that the water system be capable of delivering at least 250 gpm, uninterrupted, for two hours, the equivalent to 30,000 gallons.

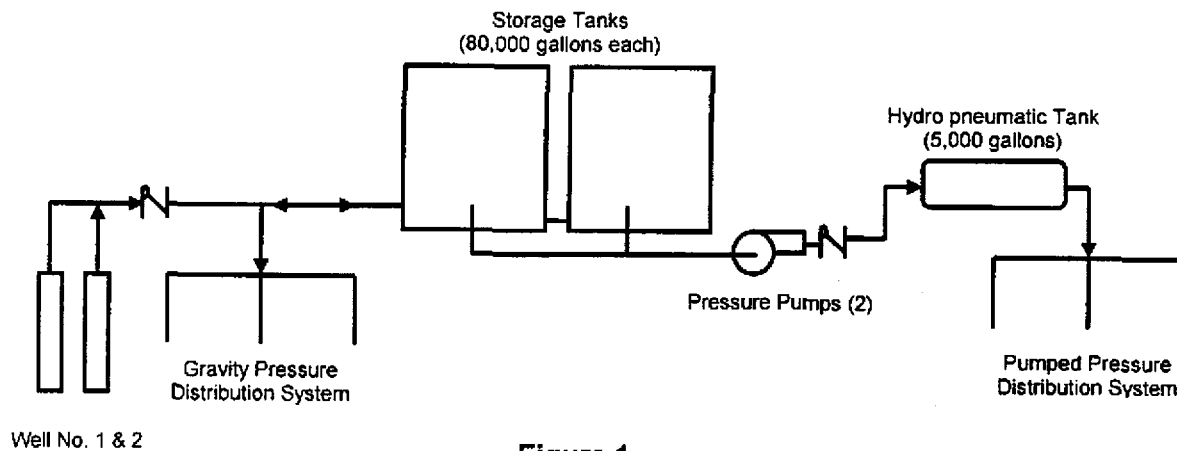


Figure 1
PVWC System Diagram

WATER PRODUCTION AND DEMANDS

As of June 2007, PVWC had 222 customers. One of the 222 customers, Yavapai Country Club, has approximately 35 dwelling units (du) on its property; all other customers are properties with a single dwelling unit. Therefore the total number of dwelling units currently being served by PVWC is 256. Table 1 below summarizes PVWC water production and demand for the past 8-½ years.

Water production is the amount of well water that needs to be pumped to meet customer demands. Water production requirements are normally greater than water demands due to inherent losses, such as leakage, within water systems. According to the National Drinking Water Clearinghouse, a 10 to 20 percent allowance for unaccounted-for-water is normal. For PVWC, the 1999 through 2006 average water production per dwelling unit was 208 gpd/du compared to a water demand of 177 gpd/du, an average "normal" loss of 15%.

To comply with Arizona Department of Environmental Quality (ADEQ) codes for public water systems, well production and storage capacity must equal peak-day demands. The peak-day is defined as the average daily demand for peak the month, which was 339 gpd/du for June 2006. This equates to a peaking factor (PF) of 1.9, the ratio of peak-day to average day water production required to meet customer demands. Therefore, the peak-day demands for the current number of dwelling units, 256 du, at an average of 208 gpd/du and a PF equal to 1.9 is:

$$\text{Peak - Day} = (208 \text{ gpd/du}) \cdot (1.9) \cdot (256 \text{ du}) = 101,171 \text{ gpd} = 70 \text{ gpm}$$

Table 1
PVWC Water Production & Demands

Year	Dwelling Units	Water Production (Well Water Pumped)		Water Demand (Customer Water Use)		% Water Loss
	(du)	(gpd)	(gpd/du)	(gpd)	(gpd/du)	
1999	209	41,863	200	34,863	167	17
2000	220	49,260	224	41,288	188	16
2001	221	51,664	234	42,688	193	17
2002	230	53,008	230	45,247	197	15
2003	232	50,416	217	41,690	180	17
2004	235	45,001	191	39,134	166	13
2005	241	44,545	185	39,590	164	11
2006	250	44,584	178	39,762	159	11
2007*	256	44,298	173	39,052	153	12
AVERAGES	230	47,543	208	40,533	177	15
* 2007 data is based on January - June						
** 2007 data is not included in averages						

In words instead of numbers and terms, to meet current demands, the water wells must be capable of producing 101,171 gallons per day, which is equal to an average flow of 70 gallons per minute (gpm) for an entire day (24 hours).

WATER WELL CAPACITY

PVWC has two water wells; Well No.1 has a pumping capacity of 45 gpm and Well No.2 a nominal pumping capacity of 80 gpm. Well No.1, currently out of service while undergoing improvements, is normally used as a standby well during periods that Well No. 1 is unavailable (i.e. repairs etc.). Well No.1 does not have sufficient capacity to meet current peak demands, however, Well No.2 does.

Well No.2 currently has a peak-day surplus capacity of 10 gpm which is equal to 14,440 gpd. This surplus capacity is sufficient to serve an equivalent of 36 dwelling units during peak-day conditions. The surplus capacity in Well No.2 is not sufficient to serve the future build-out (650 dwellings units) of Pinon Estates and Yavapai Country Club developments but it is enough capacity to serve Mr. Lofquist's parcel and any additional connections.

STORAGE TANK CAPACITY

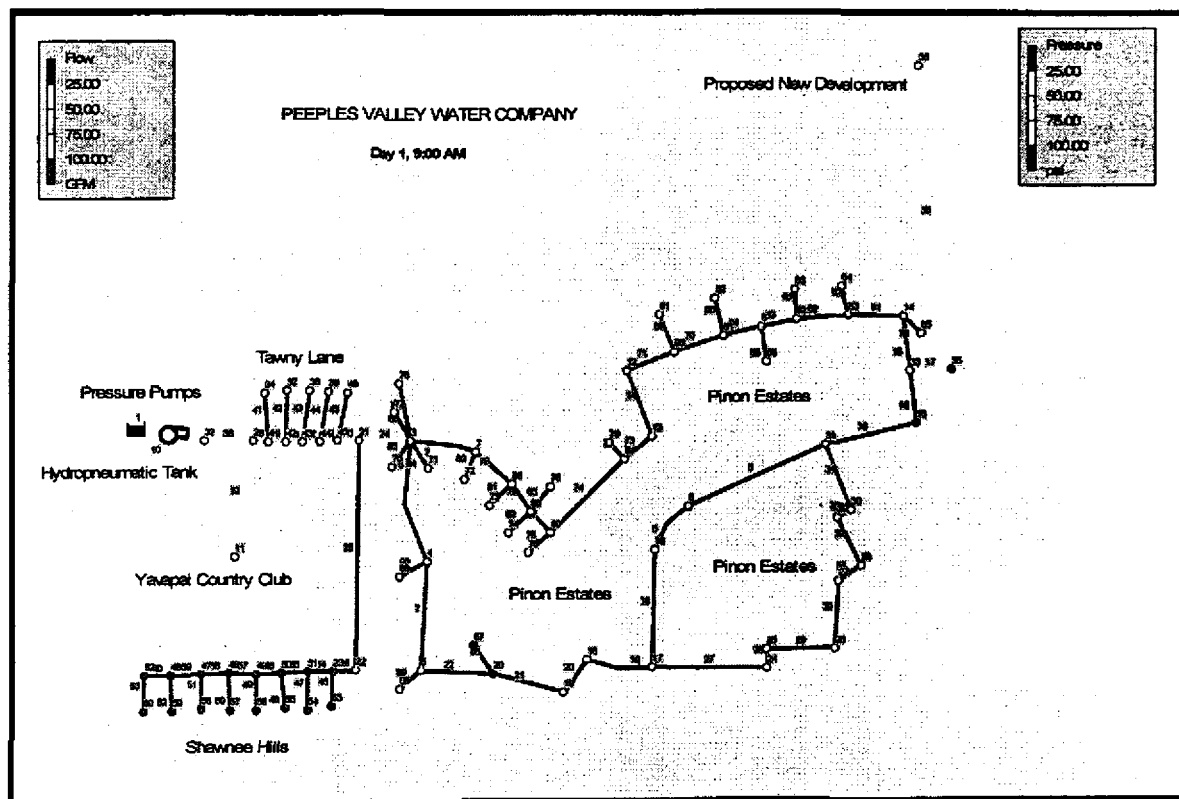
The two storage tanks have a combined volume of 160,000 gallons. According to Title 18, Article 5, of the State Administrative Code, storage tanks for public water systems must have the capacity to store the volume of water that is equal to the peak-day demands plus fire flow requirements. The required storage volume to meet current demands is 101,171 gallons for peak-day flow for 256 dwelling units plus 30,000 gallons to fight fires (250 gpm for 2 hours), for a total of 131,171 gallons. The storage tanks have 28,829 gallons of extra storage volume, (160,000 – 131,171), which is sufficient to meet peak demands for 73 additional dwelling units.

Therefore, there is sufficient storage tank capacity for the proposed connections but not sufficient to meet ultimate demands for Pinon Estates and Yavapai Country Club (650 dwelling units).

DISTRIBUTION SYSTEM CAPACITY

A preliminary evaluation of the pressure distribution system was performed using

**Figure 2
EPANet Model Diagram**



5101 E. Libby Street Scottsdale, AZ 85254

T. 602-697-8917 F. 602-324-9278 email: pradk@nyahengineering.com

EPANet, a hydraulic modeling software, to assess the capacity of system pumps and piping to delivery water to the proposed development. The preliminary evaluation was based on a scenario, in which a new line is extended from the north end of the existing pressure system to a new storage tank that would be installed at northwest corner of the development at an elevation of 4,760 ft. Figure 2 below depicts the layout of the pressure distribution system used in the modeling effort.

The following assumptions were made to create the hydraulic model of the system:

1. Fire protection for the new development would be provided by the local volunteer fire department. Therefore, no fire hydrants would be included in the new development.
2. The peak diurnal flows in the pressure system are 3 times the average peak-day flow.
3. The peak diurnal flow to the proposed development would be conveyed via a 6-inch PVC pipeline at the rate calculated as follows:

$$\text{Peak - Diurnal} = (208 \text{ gpd/du}) \cdot (1.9) \cdot (2) \cdot (32 \text{ du}) = 25,293 \text{ gpd} = 17.6 \text{ gpm}$$

4. The pressure pumps have enough capacity to provide a minimum operating pressure of 70 PSI at the hydro pneumatic tank.
5. Water would be distributed from the tank to the parcels by way of gravity pressure pipelines.

The preliminary evaluation indicates that there is sufficient capacity in the 6-inch pressure-piping network to accommodate the volume of water needed. However, the pressure at the point of delivery is estimated to be just over 20 PSI, which is only marginally acceptable. Task 2 of this investigation will consider alternatives to increase the pressure at the point of delivery. Examples of the alternatives that may be considered include installation of a booster pump on the new line to the proposed development and increasing the operating pressure at the existing hydro pneumatic tank.

Nyah Engineering Inc.**NE****CONCLUSIONS AND RECOMMENDATIONS**

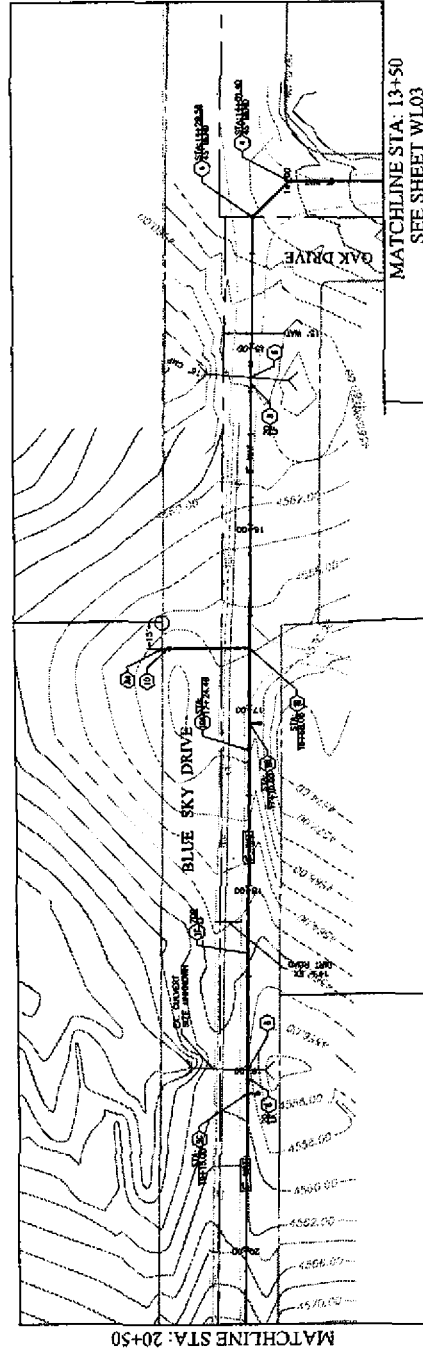
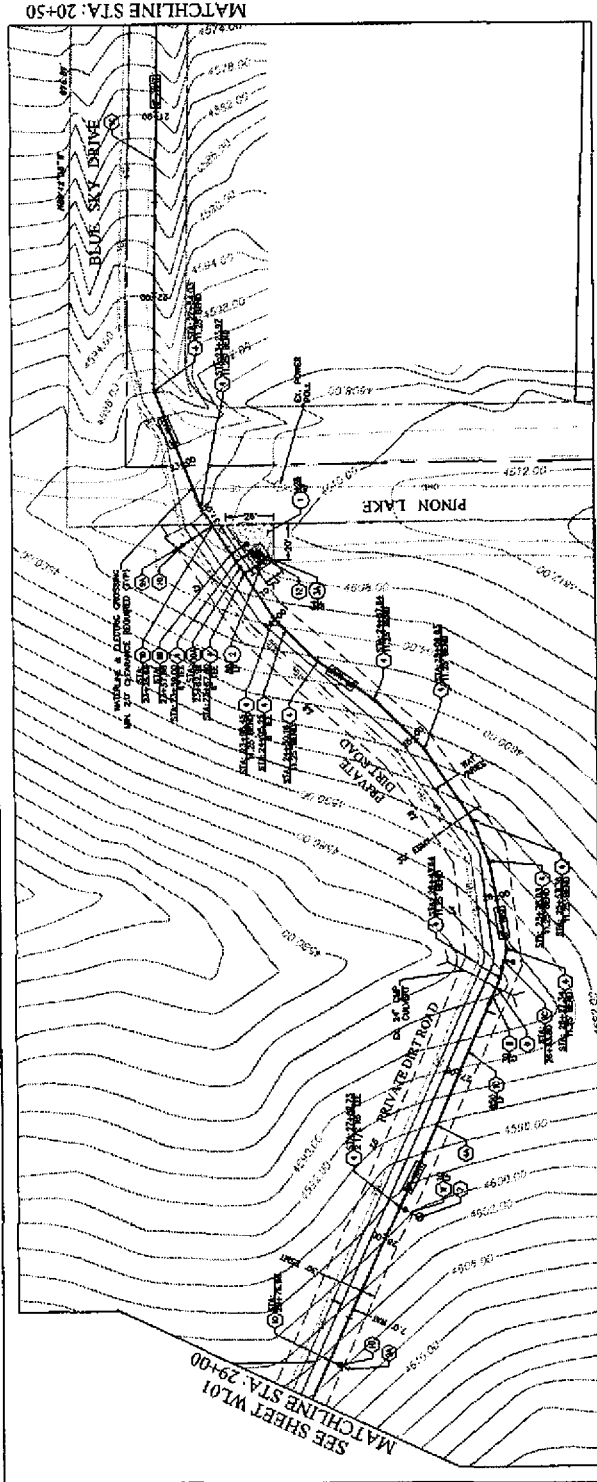
1. Water Well No.2 has capacity to supply water to current customers plus additional units during peak-day conditions (average daily flow during the peak month of the year).
2. The water storage tanks have 28,829 gallons of reserved capacity, which exceeds the capacity needed to meet existing peak-day demands and fire flow for 2 hours at 250 gpm. The reserve storage capacity is equivalent to adding 73 more dwellings units.
3. The water distribution system piping has sufficient capacity to deliver the additional volume of water to the proposed connections; however improvements will be needed to increase the pressure to the points of delivery.
4. It is recommended that Task 2 of the investigation be undertaken to determine the specific improvements and costs to delivery water to the points of use.

Please review this report and if you have any questions or comments please call at 602-697-8917.

Sincerely,



Prad Kshatriya, P.E.
Principal



NOTES	WATER LINE EXTENSION PLANS
1. RECONSTRUCT EXISTING ON IMPROVED SUBGRADE	1. WATER LINE
2. 12" DIA. CHAMBER FORCE WITH 12" DIA. LINE FOR 100' DETAIL	2. EXTENSION PLAN
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Nyah Engineering, Inc.
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PROJECT: **WATER LINE EXTENSION PLANS**

CITY: **PEEPLES VALLEY UTILITY COMPANY**
PEEPLES VALLEY, AZ

DATE: **12/08/03**

SHEET: **WL02**

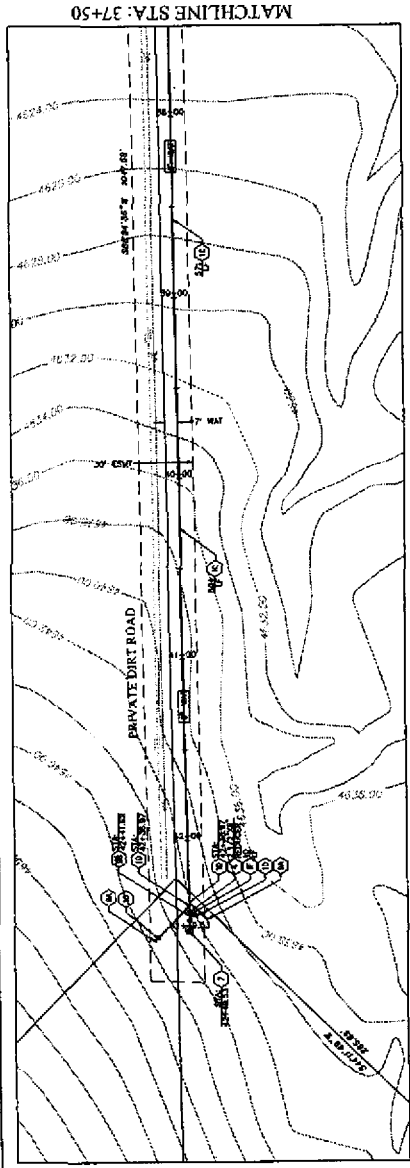
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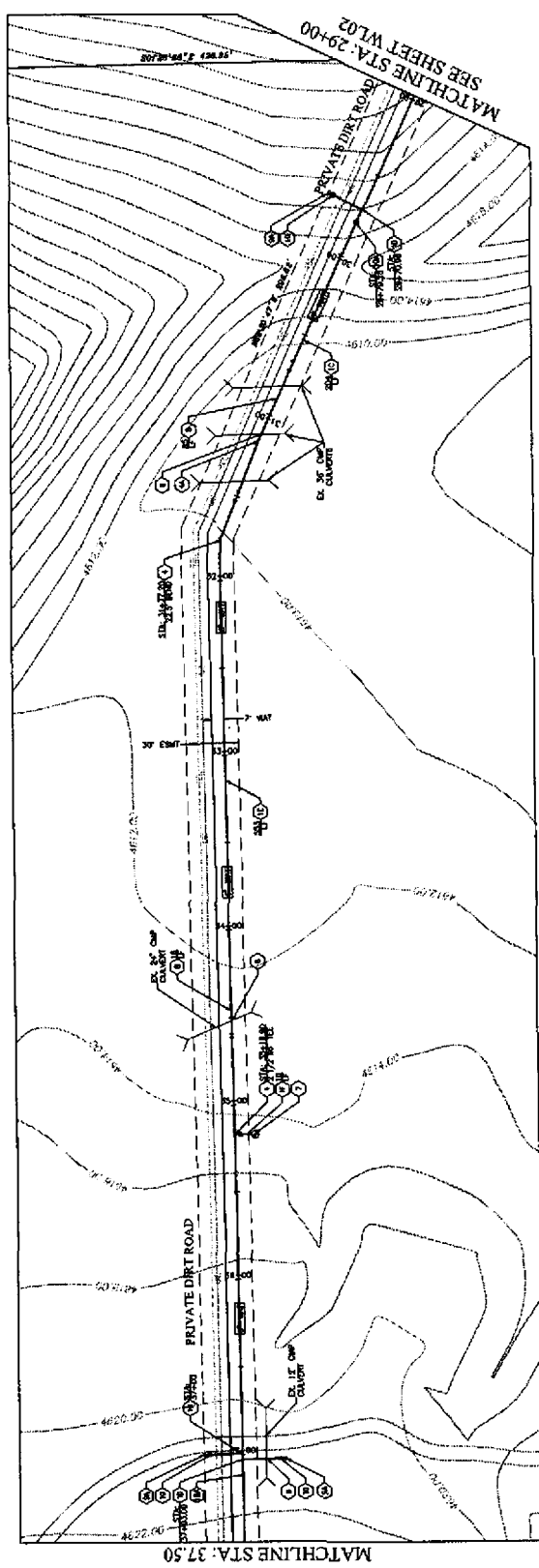
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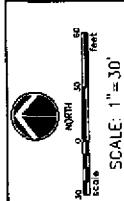
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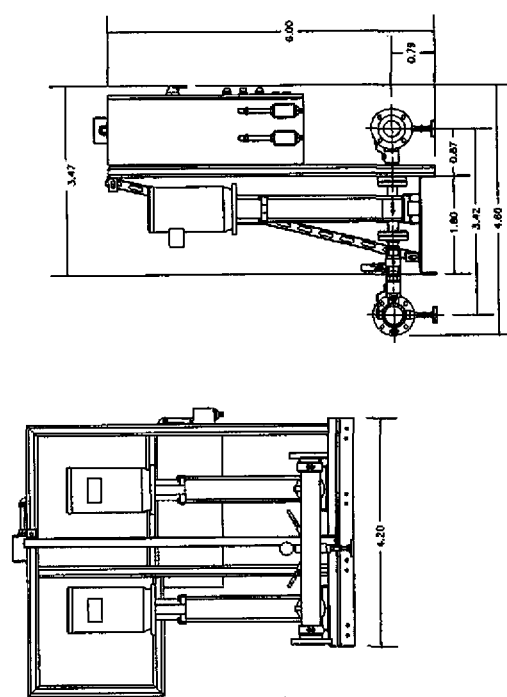
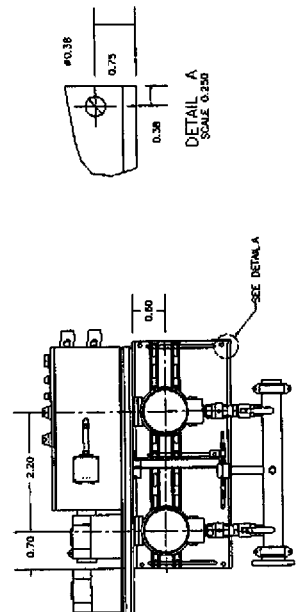
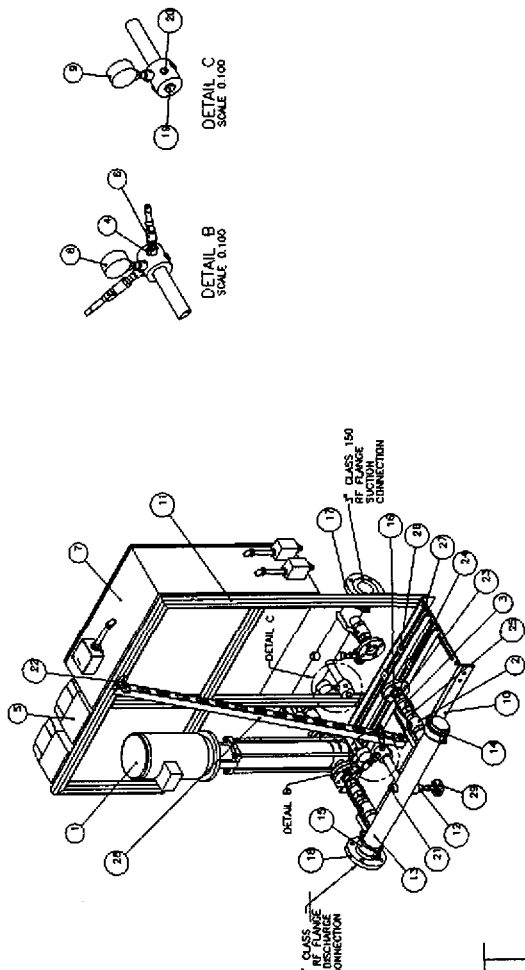
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CLIENT PEOPLES VALLEY UTILITY COMPANY PEOPLES VALLEY, AZ.		DATE 12/08/08		PROJECT NO. 2	
DESIGNED BY [Signature]		CHECKED BY [Signature]		DATE 12/08/08	
PROJECT WATER LINE EXTENSION PLANS		CLIENT PEOPLES VALLEY UTILITY COMPANY PEOPLES VALLEY, AZ.		DATE 12/08/08	
DESIGNED BY [Signature]		CHECKED BY [Signature]		DATE 12/08/08	
PROJECT WATER LINE EXTENSION PLANS		CLIENT PEOPLES VALLEY UTILITY COMPANY PEOPLES VALLEY, AZ.		DATE 12/08/08	



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	TOTAL	WEIGHT	QTY		WEIGHT
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WATER LINE EXTENSION PLANS

Nyah Engineering, Inc.
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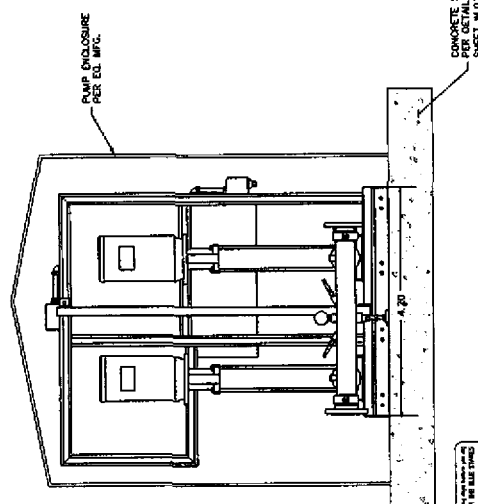
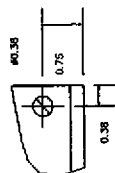
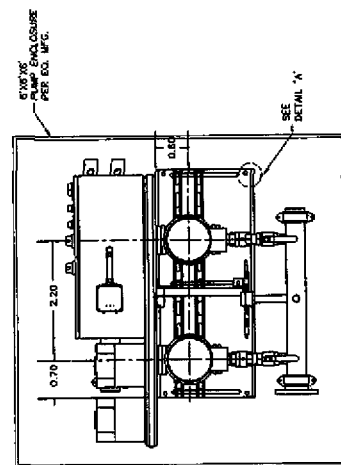
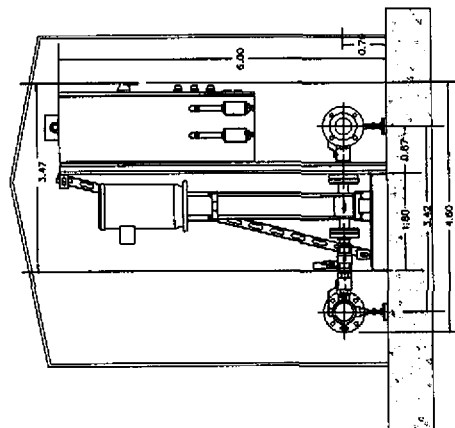
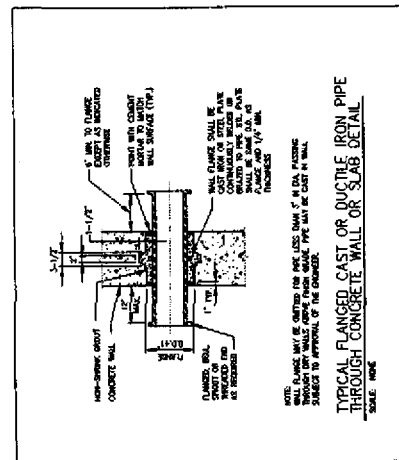
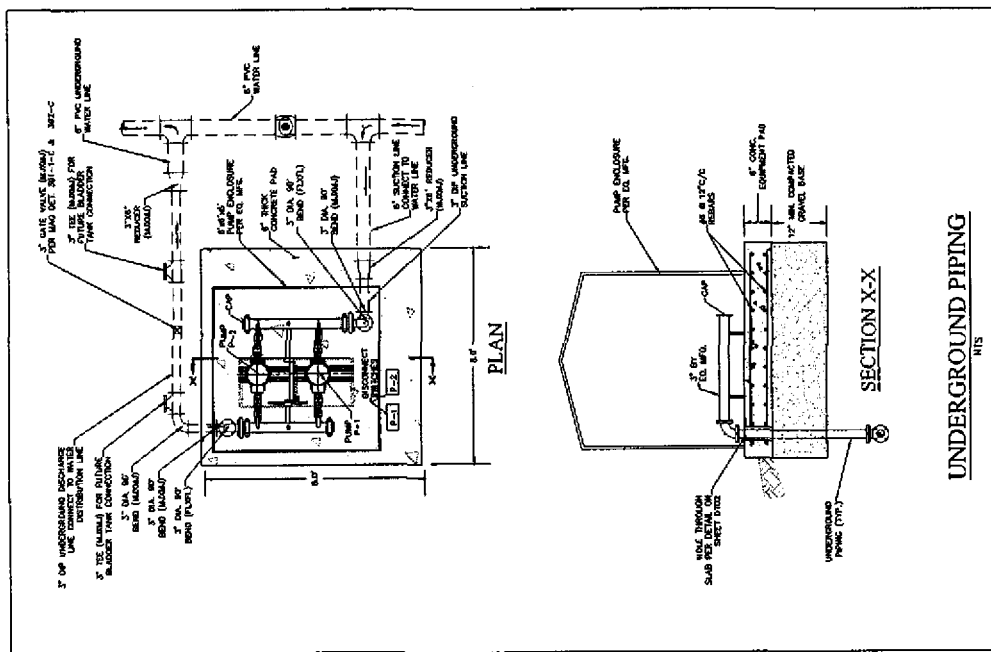


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This drawing, including the incorporated designs, is an instrument of service for this project and shall not be used for any other purpose or project without written authorization of High Engineering.

BOOSTER PUMP DETAIL	WORK NO.	W-0274 6
	DATE	12/08/08

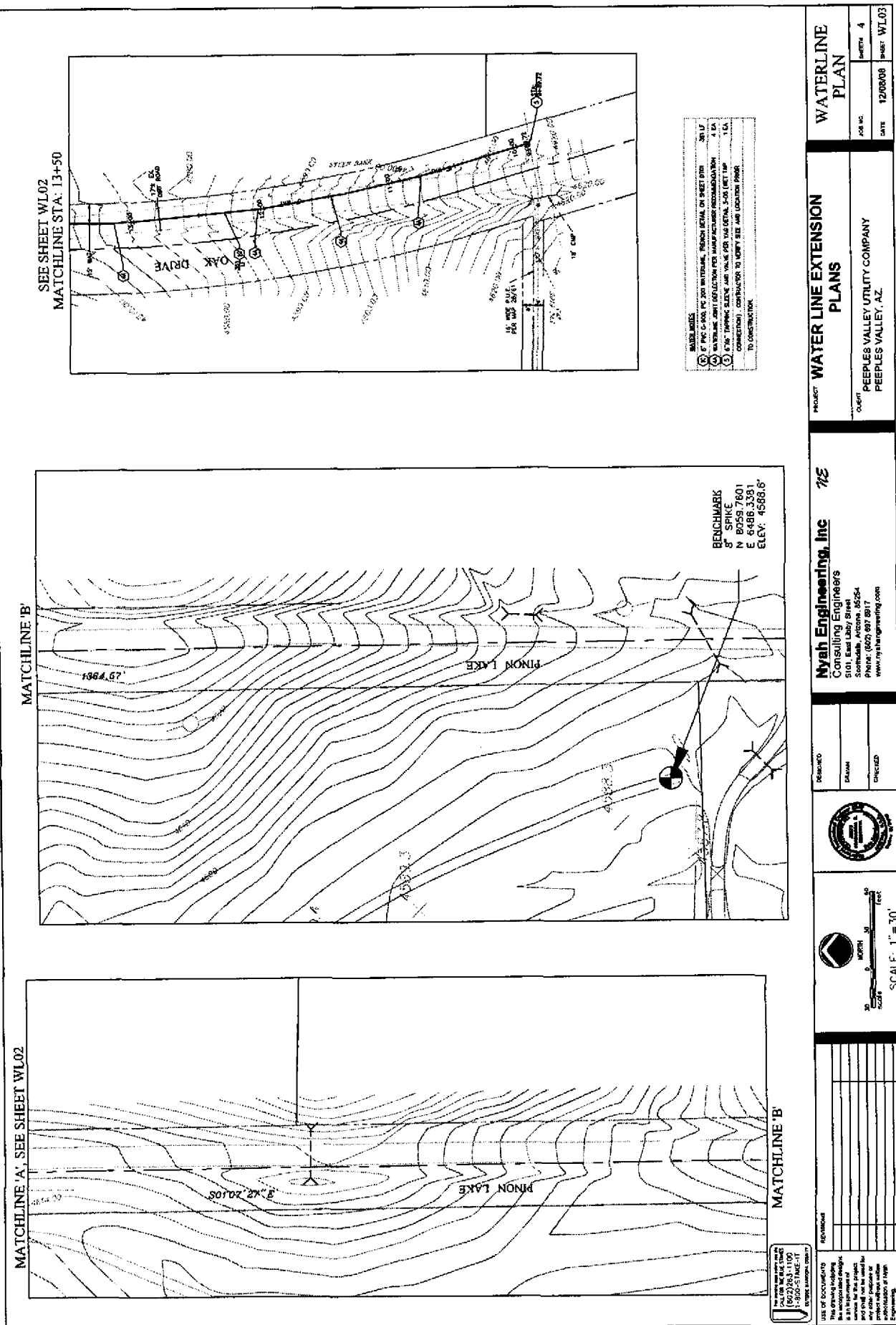
PROJECT WATER LINE EXTENSION PLANS

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Section 11303 Booster Pump System

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

The authorized factory trained representative shall provide one prefabricated, completely integrated, variable speed pumping station designed to provide constant pressure, at required flow rates with automatic lead/lag capability. The pumping station shall be manufactured by ITT Flowtronex or approved equal. It is the successful vendor's responsibility to include all necessary appurtenances to provide for a complete, automatic, smooth operating, and reliable pumping system. The manufacturer shall supply a complete set of general arrangement drawings, electrical power schematics, and control schematics in the operations & service manual, to include the complete pump and variable speed controller instruction manuals. All equipment shall be supplied by a single supplier (unitary source) to ensure system component compatibility.

1.02 REFERENCES

- A. American Water Works Association (AWWA)
- B. American National Standards Institute (ANSI)
- C. American Standards for Testing Materials (ASTM)
- D. Hydraulic Institute (HI)
- E. American Society of Mechanical Engineers (ASME)
- F. Underwriters Laboratories (UL)
- G. International Standards Organization (ISO)

1.03 SYSTEM DESCRIPTION

- A. The pump station shall utilize 2(duplex), stainless steel G&L Pumps, and vertical multistage in conjunction with a variable speed pump controller as manufactured by ITT Flowtronex. Appropriate check and shutoff valves, pressure transducers, suction/discharge piping, pump and electrical protection shall be integrated into the pump controller package. Options shall be lightning protection, low suction pressure switch, high pressure shut-down, temperature relief valves,

B. Conditions of Service

The pump station shall provide flows from (minimum) 0 GPM to (maximum) 30 GPM at 90 PSIG to the pump station discharge with a minimum suction pressure of 0 PSIG (flooded) and a maximum suction pressure of 35 PSIG.

ITT Flowtronex Pumping station model shall be MVV-30-2SS-90.

Total pumping station system friction loss shall not exceed 3 psig.

C. Sequence of Operation

The station shall receive a 4-20mA signal from each pressure transducer, as provided by the pumping station manufacturer. A pressure transducer shall be provided for each pump controller. This will provide a complete lead/ lag system coupled with a true back-up control. The pressure transducer will monitor system discharge pressure and provide an analog signal (4- 20mA) to the pump control software, and allow the variable speed pump controller to provide a variable Volts/ Hz output to the motor. Once the pressure drops below the set system pressure, the pump will start and provide system pressure (as determined by the station operator), if this pressure cannot be maintained by one pump, the next pump in sequence shall operate in a lead/lag capacity to provide the extra flow and pressure automatically **without** the use of additional panels or alternators. The sequence of the pumps shall be field adjustable, and completely automatic **without** additional panels or alternator controls. The variable speed pump controller shall be completely integrated with the VFD. Special type motors will not be allowed (see motor section). Pumps shall alternate based on elapsed run time. All program settings shall be based on centrifugal pump language and centrifugal pumps. Program settings must be field adjustable to provide on site adjustments. When the system experiences low demand, the variable speed pump controllers will reduce the speed of each pump, until demand has stopped. Pump controllers will stop each pump at zero demand, without the use of external switches or controls.

1.04 SUBMITTALS:

Submit six (6) copies of the following for approval:

- A. General elevation drawings, wiring diagram, pump curves, operating and maintenance manuals and parts list.
- B. Written certifications for listing with Nationally Recognized Testing Laboratory (NRTL) for the complete pumping system
- C. Operation and Maintenance Manuals for pumps, controllers and complete pumping station.
- D. Affidavit: The contractor shall furnish affidavits from the manufacturer stating that the pumps have been properly installed and tested, and each is ready for full time operation.

1.05 QUALITY ASSURANCE

- A. The pump station shall be furnished by a single supplier entity, which shall have responsibility for the complete pumping station.
- B. The pump manufacturer shall be ISO9001 certified, and shall design, test and assemble pumps on a regular basis.
- C. A Functional test of the control(s) and single point performance test shall be performed on each station to meet condition duty point.
- D. Qualifications:

- 1. Manufacturer shall have minimum 20 years experience building pump stations.

- B. A statement of full conformance to the following specifications signed by a corporate officer of the manufacturer.
- C. A general arrangement drawing showing overall dimensions and all piping layouts.
- D. Complete submittal data for all major equipment (pumps, motors, valves, electrical controls, etc.).
- E. An electrical schematic, that provides power and control wiring.
- F. A copy of the appropriate Instruction Operation Manual (IOM) for the pump, pump controller, and pumping station.
- G. Location of closest factory trained service centers.
- I. Manufacturer's system UL files number.

If, in the opinion of the engineer, the data submitted shows the pumping system to be an equal to the system specified, the bidding contractors shall be notified not less than 5 days prior to the bid opening date.

2.02 STATION COMPONENTS

A. Pumps

Pumps shall be constructed of 304 stainless steel and is of vertical multi-stage design. Pumps shall be the manufactured product of a US manufacturer, producing and selling pumps for a minimum of 125 years. Pump case, impellers, diffusers, seal spring, inner bowls, seal spring, shaft sleeve and retainer clip shall all be manufactured from stainless steel. Shaft bushing (if needed) shall be from ceramic. Mechanical seal assembly shall be constructed of Carbon/Silicon Carbide/ Viton as standard. Seat elastomers and casing o-rings shall be from Viton. Shaft sleeve shall be from stainless steel. Tie rods and nuts shall be from zinc coated steel. Pump curve shall rise continuously to shut off head. Best efficiency point of pump shall lie between 70% and 80% of maximum flow capacity of the pump. Pump connections shall be NPT or ANSI flanged either class 150 or class 300. Maximum pressure rating for class 150 flanges shall be 200 PSI and for class 300 shall be 360 PSI. Pump shall accept a standard NEMA C-face motor or JM frame and shall not require a specialty motor with special thrust bearings or integrated VFD. Vertical multistage pumps shall have thrust balanced within the pump. All pumps used will have a standard NEMA frame motor, and be readily available from manufacturer.

B. Station Base

The pump station base shall be designed and fabricated to provide proper structural support for all attached equipment, and provide anchor bolt support. The base shall supply sufficient rigidity to withstand the stresses of reasonable and competent transportation to site, off loading, installation, and operation. Main structural members shall be constructed from heavy weight $\frac{1}{4}$ "or 3/8" flat steel with a reinforcing channel for larger stations. Steel base shall be shot blasted, primed, and then painted as per paint specification (see PART 4, Finishes). Provisions shall be made in the station base for off-loading and handling the station at the site of installation. Base shall include steel plate mounted under pump and motor and shall be of compact design for most standard doorways.

C. Piping

All piping shall be constructed from 304 stainless steel, schedule 40 type or heavier pipe as required to maintain a 3 to 1 pressure safety factor (including 1/16" corrosion allowance). All piping shall be hydrostatically tested to a minimum 150% of maximum shutoff pressure generated by the pumping station. Suction and Discharge manifolds shall be designed and constructed for minimal friction loss and compact design for most standard doorways.

D. Valves

Pump isolation valves 2" and below shall be full-port ball valves. Full-port ball valves shall have a brass body; ball shall be chrome plated brass with brass stem. Valves shall be pressure rated to 600 PSI WOG. Valves shall conform to MSS-SP-110. Ball valves shall be Watts model FBV-3.

2. Pump Check Valves:

Each pump discharge shall be equipped with a spring-loaded non-slam silent check valve, appropriately sized to allow no greater than 5 PSI of head loss at full station rated capacity. Check valves 2" and below shall have a brass body and PTFE Teflon seat. Check valves 2" and below shall be pressure rated to 400 PSI WOG. Check valves 2" and below shall be WATTS Series 600. When pump is retired, valve shall function to close tightly before flow is reversed, and reducing the possibility of water hammer or shock.

E. Pressure Gauges

Pressure gauges shall be liquid filled, bourdon tube type. Gauges shall be supplied for both the suction and discharge manifolds. All gauges shall be bottom mounted and shall be glycerin filled to reduce wear due to vibration. Accuracy shall be within $\pm 1.5\%$. Gauge diameter shall be 2½". Range shall be at least 30% higher than the highest pressure attainable from the pumps at shutoff head conditions. Gauges shall include stainless steel back and copper alloy internals. Pressure gauges shall be manufactured by WIKA® or Equal.

F. Bolts

All bolts used in the assembly of the pumping system shall be 316 L stainless steel and shall be the proper size and gauge for rigid construction.

G. Motors

Motor(s) for the main pump(s) shall be of United States manufacture, C-face or JM frame type open drip proof enclosures 1.15 service factor, Min class F insulation. Motors shall be wound for the starting configuration as called out in the technical data sheet. Design pump brake horsepower shall not exceed 100% of motor horsepower exclusive of service factor. The motor shaft shall be high-strength steel. Motors shall be as manufactured by Baldor Electric Motors. Motors shall comply with EPACT efficiencies and shall be wound with ISR (Inverter Spike Resistant) wire for use with VFD's. Motor manufacturer must provide letter of compatibility of motor with another type of variable frequency or variable speed drive.

Part 3 - ELECTRICAL**3.01 SCOPE**

To provide complete main fusible disconnect, variable speed pump controller, pressure transducers, NEMA motors, instrumentation and controls to automatically start, stop and modulate pump speed. To smoothly, efficiently and reliably provide pump variable flow rates at a constant discharge pressure. Pumping station shall provide full pump, motor and drive safety features needed to protect the equipment and piping system.

A. Electric Supply to the station:

Electrical utility supply is available from the pole at the site. Contractor is responsible to contact the electrical utility and shall acquire electrical connection to the step down transformer and meter in accordance with the current electrical codes. Contractor shall coordinate and install the appropriate size of the transformer. Contractor shall submit the electrical design for power supply to the booster pump facility and acquire approval of the engineer. Power supply coordination, furnishing of the required equipment and installation of the panels, transformers, service panels, concrete pads, site work etc. is inclusive of the project.

B. Main fusible Disconnect Enclosure

Individual fusible disconnects shall be provided to completely isolate individual motors starting equipment from incoming power. Individual disconnects shall have a through door operator, and shall be sized as shown in the technical data sheet. Motor fusible disconnect panel shall be housed in a NEMA 4 enclosure with integral latches. The control enclosure shall be constructed of 12-gauge steel and the back plate assembly shall be constructed of 12-gauge steel. All indicating lights, reset buttons, individual selector switches and the operator interface device shall be mounted on enclosure door and also be rated NEMA 4. All internal components shall be mounted and secured to the removable back plate assembly with rigid steel brackets. Disconnects shall be manufactured by ABB Control Inc or Allen Bradley.

C. Lightning and Surge Arrester Option

All electrical equipment shall have an option to be protected by a UL approved Category C and Category B surge arrester, which shall suppress excessive voltage surges on incoming power. The device shall withstand an impulse of 10Kv/10Ka under IEEE C62.41 Category C and shall withstand a ringwave of 6Kv/500a and an impulse of 6Kv/3Ka under Category B. Pass voltage for a 480v device to the end equipment shall not exceed 1800V when subjected to an 8 x 20 microsecond waveshape, resulting in the following performance statistics: 3720 joules minimum dissipation at 82,500,000VA and 1800V maximum voltage. Response time shall be less than 5 nanoseconds.

D. Variable Frequency Drive.

The pump controller shall be the ABB ACS550 variable speed pump controller. The controller shall provide an adjustable carrier frequency with IGBT power switching, and

utilize PWM technology. The drive shall provide noiseless operation of the driving motor, short circuit and ground protection, and work with controlled sinusoidal current synthesis and dynamic over current limitations. The controller shall be one complete integrated unit including the variable frequency drive, programmable pump control logic, and include a NEMA 1 enclosure. Additional control panels, PLC's or other external devices, shall NOT be necessary to accomplish complete pump programming and variable speed control of pump and motor. Standard variable frequency drives that do not incorporate pump control logic as the primary control software; programming and features directly applicable to centrifugal pump applications shall not be considered equal.

The pumping station controller shall provide a LCD two line display with 16 characters per line and programming keypad for data entry. Unit(s) shall utilize user-friendly front panel programming in three languages that displays pump and motor language in clear text. Three colored LED's shall signal 'power on', 'pump running' and 'fault'. Program settings shall be changeable and stored in non-volatile memory. Program settings shall be retained in memory in the event of loss of power to the controller, without the use of a backup battery. System operating pressure shall be clearly displayed in PSI or feet of head for ease of use and to provide an operator friendly interface. Additional parameters, where applicable, shall be displayed in units consistent with pumping systems. Generic control systems adapted from other applications shall not be considered equal.

The settings and program in whole or part may be locked out with the use of an operator selectable password. Standard system hydraulic settings shall include at a minimum the following functions: loss of suction, lack of NPSHa, pump run-out protection, "dead-head" protection, constant pressure setting with variable flow capability, constant flow with variable TDH (pressure) capability, quadratic differential flow calculation, system curve compensation, multiple pump operation with alternation, pump starting point with allowable, adjustable pressure drop, minimum speed with time delay, pressure of flow sensor error, overpressure shutdown, and low flow shutdown.

E. Pressure Transducer

Pressure transducer shall be utilized for providing all pressure signals for the pump control logic. Pressure transducer shall be a solid-state bonded strain gage type with an accuracy of plus/minus 0.20% and constructed of 17-4 pH stainless steel. Transducer shall be rated for station discharge pressure as shown on technical data sheet, and shall provide gauge pressure output, rather than an absolute. Pressure transducer constructed of plastic is not acceptable. Pressure transducer shall be 4-20mA analog type with 7- 33 VDC supply range and utilize a packard type connector to prevent moisture intrusion. Transducer shall be manufactured by Texas Instruments.

F. Controls and Enclosure

The controls shall be designed and installed to perform the following function:

1. When pumps P-1 and P-2 are set in auto mode, pumps shall come on and off automatically as follow:
 - a. When discharge pressure in the discharge side of the system fall below set value (of 65 PSI to 85 PSI) one pump shall come on.
 - b. Pump starts at low speed and ramp up to the high speed depending on the discharge pressure demand.

- c. If pump one can not full feel the demand another pump shall come on line to maintain the discharge pressure.
- d. Second pump starts with low speed and goes to higher speed as required to maintain the set pressure in the discharge side.
- e. Second pump slows down and than shutdown as the discharge pressure demand slows down.
- f. First pump slows down and than shutdown as the discharge pressure demand slows down.
- g. Alternate pump starting sequence every time the system starts up.

The control panel with controls shall be built in accordance with the NEC, and shall comply with UL standards. Pump station manufacturer shall be authorized under UL508A to manufacture its own control panels, and the control panel shall be manufactured by the pump station manufacturer. All equipment and wiring shall be mounted within the enclosure and each device shall be labeled for proper identification. All adjustments and maintenance shall be accessible from the front of the control enclosure. A complete wiring circuit diagram and legend with terminals, components, and wiring completely identified shall be provided. Main disconnect shall be interlocked with door.

Panel face switches and lights:

- Reset—Acknowledges pump station alarms (Alarm package option).
- Individual pump disconnects.
- Individual pump run and alarm lights (Alarm package option).
- Alarm horn.
- Low suction pressure reset.

The pump station, including electrical components and enclosure, shall be UL labeled as a completed assembly with manufacturer's UL label applied to the pump station.

Part 4 – FINISHES

4.01 Paint

Steel base and main disconnect panel stand shall be grit-blasted with #50 steel grit per SSPC-10 to a near white metal condition. The cleaned steel surfaces shall immediately thereafter be primed with an industrial grade primer to a thickness of 2 ½ to 3 mils epoxy primer. The finish coat shall be acrylic enamel to a thickness of no less than 3 mils. The control panel shall be dip cleaned, acid etched and neutralized, iron phosphate coated and painted with a finish coat of 1 ½ to 2 mils of polyurethane.

PART 5 - INSTALLATION

5.01 General.

Other contractors or entities shall be responsible for providing equipment, and labor necessary to unload and set the pump station according to acceptable laws and practices. Parts, additional

equipment, and labor necessary to complete the installation of the pump station shall be provided by selected contractors or arranged by the factory authorized representative. All contractors or persons shall hold a license to procure and operate the needed equipment to safely unload and install the complete pumping station.

5.02. Unloading and Setting Supervision.

Setting of the pump station is the responsibility of others, not the manufacturer. Equipment required to off-load and set the pump station is to be provided by others.

5.03 Start up and Training.

After the station startup has been completed, but before the technician leaves the job site, a training session shall be given to the owner or to the owner's representative, familiarizing that person (operator) with the pumping system operation, maintenance and adjustments(if needed). Only authorized Aqua Force representatives familiar with the complete system and Aquavar variable speed controllers shall be considered from the local area.

5.04 Warranty Requirements

Provided that proper maintenance has been performed by the operator or user during warranty period, and a component failure occurs, the manufacturer shall provide the replacement part or component. Repairs done at manufacturer's expense must be pre-authorized. The start-up certificate must be on file with manufacturer to activate warranty. Manufacturer shall support a wide network of technical service agents who shall be utilized for service work.

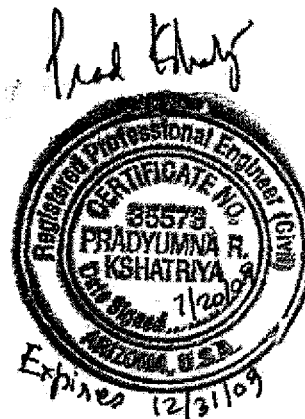
PART 6 – PUMP HOUSE

- A. The Pumping System Building shall be a durable, corrosion-resistant, molded fiberglass composite structure comprised of four molded wall panels, a molded one-piece roof, and molded doors. The inside height shall not be less than sixty nine inches near the walls. The vaulted inside ceiling height at the peak or ridge shall determine the overall height (less the thickness of the roof).
- B. Exterior gel coated finishes of the building shall be produced in molds, using 18-20 mils of high quality gel coat with U-V inhibitors, to produce a uniform, impermeable shield protecting against UV rays. It shall be free of pinholes or other irregularities which can allow water to penetrate the structure. The gel coat shall be pigmented with a white color and shall not require painting. The gel coated finish shall be impervious to a corrosive atmosphere. The interior surfaces of the walls and ceiling shall be coated with a white gel coating to make the building interior easy to illuminate and keep clean.
- C. Seamless, one-piece walls shall be composed of a foam core bonded between two stressed skins of fiber reinforced plastic (FRP) Each skin shall be approximately 1/8" thick. Fiber beam technology shall achieve shelter strength and integrity through implementation of a series of integrated fiberglass beams throughout the foam core connecting the outer and inner fiberglass surfaces of the walls and roof.
- D. The roof shall be a vaulted "hip" design. There shall be no eaves. The seamless, one-piece roof shall be composed of a foam core bonded between two stressed skins of FRP each approximately 1/8" thick.
- E. Using the same materials of construction, doors shall be fabricated to be completely compatible with the building. Three each 60" x 54", and 1.75" thick doors shall be provided to access pumps and controls. Threshold shall be 3.5" high for easy stepover. Each door shall be hung on 4" x 4" stainless steel ball bearing hinges with non-removable pins. The hinges shall be bolted through the door jamb with stainless steel fasteners.

Hinges shall be oriented in the full-mortised position with no fasteners exposed with the door closed. Each door shall include a heavy duty track-type door holder to prevent the door from opening beyond 95 degrees and to allow for shock absorption. An adjustable tension setting shall allow the door to be held in the open position until it is firmly pushed closed.

- F. Standard doors shall be trimmed with a weather-tight neoprene gasket and a door sweep. The standard latching device shall be a three-point system which holds the door snugly closed at the top, middle and bottom. Rollers shall be utilized to ensure smooth latching action. A handle shall be provided on the door which allows the door to be pulled closed from the inside. The cast stainless steel outside lever handle shall be pad- lockable and tamper resistant.
- G. Door jams shall be molded as an integral part of the wall.
- H. Standard snow load shall be thirty (30) pounds per square foot.
- I. Standard wind load shall be 90 miles per hour.
- J. Both class I and class II fire and smoke ratings shall be achieved through use of resins and additives.
- K. Piping shall be routed through the wall. Each cover plate shall be provided in two halves, with access hole at least 1/4" larger in diameter than the OD of the pipe to penetrate the wall. Cover plates shall be attached directly to the wall after the contractor provided piping is connected to the pump station piping. Contractor shall be responsible for all thrust restraint.
- L. Environmental Control Systems
 - 1. Exhaust fan and inlet louver - Exhaust fan shall be a high capacity direct drive propeller wall mounted fan. Capacity shall be 1850 CFM at 1/2 inch static pressure. Fan shall be 10" in diameter and shall come complete with a wall collar and exhaust damper. Inlet louver shall be gravity actuated center pivot damper, opening on fan starting, closing on fan stopping. Exhaust fan and louvers shall be equipped with external hoods and screens, to direct air movement vertically.
- M. Station Heater. The pumping system manufacturer shall provide a single-phase, line voltage, heavy duty industrial rated space heater having 15kW rating. The heater shall be provided with a fusible disconnect switch, thermostat, and thermal safety overload shutdown. The heater shall be prewired and securely mounted on the house wall.
- N. Station Air Conditioner. The pumping system manufacturer shall provide a single-phase, 115 volt AC. AC shall be sleeve mounted through the wall. AC shall required a maximum of 5.8 amps at 115/1/60, and be capable of supplying 5,400 BtuH for cooling.
- O. External Station Lighting Package, Incandescent. The pumping system shall have a lighting package to illuminate the exterior utility wall. Light shall include Photocell. The light shall be controlled by an on/off switch mounted external to the pumping system electrical control cabinet.
- P. Electrical
 - 1. All wiring shall be housed in surface mounted EMT or schedule 40 PVC conduit.
 - 2. one (1) ground fault interrupting receptacle shall be located in strategic position to assure access to all equipment.
 - 3. Station Power Supply - The pump station manufacturer shall provide an auxiliary transformer prewired and mounted on the house wall. It shall deliver 240/120 volt single phase power to its distribution panel, sized to support all building loads without overloading.
 - 4. (1) 4', 3 bulb, overhead, fluorescent light with wall switch.

5. All conduit and wiring shall be installed in accordance with the latest edition of the National Electric Code.
 6. Station be equipped with a 12 circuit, 60amp, 120V breaker panel with a NEMA 12 rating.
- Q. Manufacturer shall supply matting in front of the control panels occupying the entire space required by NEC for proper clearances. Matting shall supply slip resistant footing for maintenance personnel.



YAVAPAI COUNTY**Development Services**

Prescott - (928) 771-3214 Fax: (928) 771-3432
 Cottonwood - (928) 639-8151 Fax: (928) 639-8153

**Flood Control District**

Prescott - (928) 771-3197 Fax: (928) 771-3427
 Cottonwood - (928) 639-8151 Fax: (928) 639-8118

500 S. Marina Street, Prescott, AZ 86303 and 10 S. 6th Street, Cottonwood, AZ 86326

Addressing - Building Safety - Customer Service & Permitting - Environmental - Flood Control District - Land Use - Planning & Design Review

CERTIFICATE OF APPROVAL TO CONSTRUCT WATER FACILITIES

Y. C. D. S. E.U. File No: A52008001644	APN: 800-17-074B
System Name: Peeples Valley Water Company	
System Owner/Address: PO Box 88006, Phoenix, Arizona 85080	
Project Name: Blue Sky Drive L/E	
Project Owner/Address: Peeples Valley Water Company, PO Box 88006, Phoenix, Arizona 85080	
Project Location: Peeples Valley, Arizona	
Project Description: Provide water needs for the additional lots by extending water line along Blue Sky Drive and continuing West along a private dirt road. Installation providing a water booster pump station to provide required water pressure at each lot. Project consists of 6 inch PVC c-900 water line extension, 2 inch water services, fire hydrants, booster pump station, valves, as shown on the drawings	

Approval to construct the above-described facilities, as represented in the approved plan documents on file at Yavapai County Development Services- Environmental Unit, is hereby subject to the following Provisions:

- Construction shall be in accordance with plans and specifications stamped "YCDS-EU Construction Authorization (Approval to Construct)", which are dated and signed by the authorized Environmental Unit staff.
- Issuance of this "Approval to Construct" does not authorize construction in any County, Town, City or State road rights-of-way for this project. A separate permit may be required. Please contact the appropriate jurisdiction for this permit.

Provisions are continued on following pages.

The state law, A. R. S. §49-104.B.10, requires that construction of the project must be in accordance with rules and regulations of Arizona Department of Environmental Quality and Yavapai County Development Services-Environmental Unit. If construction has not started within one year of the date of this approval, this certificate will be void and a written extension of time shall be required.

9-14-09 *10-22-09*

 Date Approved
 Geoff Meek, RS, Manager
 Environmental Unit

CC: Project Owner
 System Owner
 Engineer: Brad Kshatriya, P.E.
 Public Works: Foster Thrift

- The Project Owner shall retain the services of a professional engineer before starting project construction to provide detailed construction inspection of this project. Upon completion of construction, the engineer shall fill out the Engineer's Certificate of Completion and forward it to the Environmental Unit staff with sealed "As- Built" plans, construction and test data. "clouding" or other effective identification method shall conspicuously identify the changes shown in the "as-built" plans. Upon receipt of these materials, the Environmental Unit staff will review the file and if in order, issue an APPROVAL TO OPERATE.
- The Project Owner shall not begin operation of the newly constructed facility until an APPROVAL TO OPERATE is issued by the Department.
- Approval to Construct is based on plans submitted by Nyah Engineering, Inc., signed by Prad Kshatriya, PE, and dated September 16, 2009.
- Microbiological testing must be completed in accordance with AWWA requirements.
- System must have an agreement with an appropriate Certified Operator for system operation.
- This approval does not supersede or eliminate the necessity of obtaining permits or approvals from other county, state or federal agencies or departments.

WATER USE DATA SHEET

(Peoples Valley Water Company)

NAME OF COMPANY: Peoples Valley Water Company

ADEQ Public Water System No. 13-078

MONTH/YEAR (Last 13 Months)	Number of Customers	Gallons Sold (Thousands)
February, 2009	215	491
March, 2009	216	855
April, 2009	217	998
May, 2009	219	1,624
June, 2009	221	1,375
July, 2009	221	1,781
August, 2009	222	1,600
September, 2009	223	1,074
October, 2009	222	887
November, 2009	220	727
December, 2009	218	662
January, 2010	218	616
February, 2010	217	474
Storage Tank Capacity (Gallons)	Number Of Each	Arizona Dept. of Water Resources Well I.D. Number
80,000	2	55-625279 85 gpm
5,000 Pressure Tank	1	55-563104 100 gpm
Other Water Sources in Gallons per Minute	0	
Fire Hydrants on System	Yes	
Total Water Pumped Last 13 Months (Gallons in Thousands)	14,546	